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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,804	09/30/2004	Thomas Bruemmer	F-8389	9653

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EXAMINER	
LEFF, STEVEN N	

ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,804	BRUEMMER, THOMAS	
	Examiner	Art Unit	
	STEVEN LEFF	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-23* is/are pending in the application.

4a) Of the above claim(s) *9,21 and 22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 10-20 and 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 2/22/05 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered. It is noted that the ids of 2/22/05 does not currently provide a list of the information submitted for consideration by the Office where it is noted that the search report only appears listed on the cover sheet and not on an accompanying 1449 form.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- Claims 1-7, 9-20, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
    - With respect to claim 1 the phrase "said air drying" is rejected as it lacks antecedent basis and thus it is unclear if the air drying is with respect to the previous drying step, or a different drying step altogether.
    - The phrase "normal room temperature" in claim 23 is rejected, as it is a relative term, which renders the claim indefinite. The phrase "normal room temperature" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what is encompassed by the phrase "normal room temperature"; it is unclear as to what degree of difference is encompassed by this phrase, if not "normal" since what may be considered hot or cold to one person may be

considered "normal" to another. The phrase is further rejected as it is unclear as to what the "normal" temperature is with respect to, i.e. if it is with respect to a general temperature, or a specific temperature which is "normal" for the specific material and composition being processed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

- Claims 1-3, 7, 10-13, 15, 19-20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dudacek (6001408) in view of Bindzus et al. (http://cat.inist.fr/?aModele=afficheN&cpsidt=13906359;Glass transition of extruded wheat, corn and rice starch).

  Dudacek teaches a method for producing a starch mixture comprising mixing a first component containing at least one starch (col. 5 lines 1-9), with a second component containing at least water (col. 5 lines 20-30), in an extruder (col. 6 line 5) where the total water content of the mixture containing the first component and the second component is less than 40 % by weight (col. 5 lines 37-39, col. 9 lines 37-38), maintaining the temperature during a cooking processes in the extruder between 120° and 250°C (col. 9 line 40-43), drying the extrudate emerging from the extruder at normal room temperature

(col. 8 lines 30-31), and grinding and screening the dried extrudate (col. 8 line 31, col. 9 lines 60-61, col. 3 lines 35-41).

Dudacek continues by teaching that the maximum screen size during screening is about 4 mm, or from about 1 mm to 3 mm (col. 8 lines 30-36), where it is noted that .027 inches equals .68 mm and that .128 inches equals 3.25 mm and that the initial water content of the first component is about 10-15 % by weight (col. 5 lines 8-9). In addition the mixing takes place in a twin extruder rotating in the same direction (col. 6 lines 30-31) at 200 to 1200 rpm (col. 9 lines 38-39), where the total water content of the mixture containing the first component and the second component is between 15-20% (col.5 line 38) where a moisture content of 20% is taught. With respect to claims 12 and 20 it is noted that these claims do not provide an additional step in the making of the product, and thus Dudacek is taken to meet all of the method steps with respect to claims 12 and 20 since these claims are directed to an intended method of using the product as opposed to the method of making the product.

However Dudacek is silent with respect to a specific mechanical energy of 120 to 220 Wh/kg being introduced to the product and that the water temperature which is introduced in the starch mixture is between 20 and 70C or 30- 60C.

Bindzus et al. teach extrusion cooking of a starch product "under a specific mechanical energy input (SME) ranging from 81 to 365 WH/kg" for affecting texture attributes (abstract).

Therefore although Dudacek is silent with respect to a specific mechanical energy of 120 to 220 Wh/kg being introduced to the product, Dudacek does teach the desire to provide physically modified starch where the initial moisture content of the starch material can be adjusted by the addition of water or heat (col. 3 lines 11-14), which directly affects the viscosity of the starch product within, in addition to teaching the specific moisture content of the product as is taught by claim 1. Further since Dudacek teaches that the temperature, the rotational screw speed, and/or the rate of feed into the extruder can be controlled (col. 7 lines 14-27), in addition to teaching that the electrical draw on the motor can be varied depending upon run conditions (col. 9 lines 45-48), and since the only difference between the prior art and the claims was a recitation of a specific range of mechanical energy of 120 to 220 Wh/kg which is applied to the product and as specifically taught by Bindzus et al. (abstract), one of ordinary skill in the art

would have been motivated to combine the teachings of Dudacek and Bindzus et al. since the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages" (see MPEP 2144.05 IIA) to obtain the desired characteristics of the product as is taught by Dudacek (col. 7 lines 14-17).

Further, since one of ordinary skill in the art would not expect the method of the instant claims to perform differently than the prior art method, and since MPEP 2144.04 IV A states "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," the claimed method is not patentably distinct from the prior art method (See MPEP 2144.04 IV A).

Therefore it would have been obvious to one of ordinary skill in the art to teach a specific mechanical energy of 120 to 220 Wh/kg being introduced to the product since all the claimed elements were known in the prior art and one skilled in the art could have substituted the specific mechanical energy which is introduced into the product with no change in their respective functions, thus yielding predictable results to one of ordinary skill in the art at the time of the invention since the mechanical energy which is introduced is a function of the desired final product and the initial characteristics of the product, as well as other undefined rate dependent variables for producing the desired texture attributes with respect to an extruded, cooked starch product as is taught by Bindzus et al. (abstract).

With respect to the water temperature which is introduced in the starch mixture being between 20 and 70C or 30-60C, Dudacek teaches the addition of city water into the starch mixture to control the moisture content thereof (col. 9 lines 4-7), in addition to teaching the city water at a temperature of 67 F or 19C (col. 10 line 50) and further teaching the desire to provide high dispersability and no agglomerating (col. 7 lines 7-10), where the water solubility of the starch material is a function of the size of the starch particles and the temperature of the water which is being used to dissolve or disperse the particles in order to form the starch mixture. Therefore it would have been obvious to one of ordinary skill in the art to teach the water temperature which is introduced in the starch mixture being between 20 and 70C or 30-60C in order to ensure proper dispersability of the starch particles within the water since the increased temperature

would increase the rate of the dispersing of the starch particles (col. 14 lines 35- col. 15 lines 20) thereby reducing the amount of time which is required to obtain a specific end product since the initial temperature of the starch mixture is higher thus reducing operating time which is desirable in order to reduce operating costs since the starch product achieves its desired amount of working and/or heating in the motor driven extruder in a more time efficient manner.

Further, since the only difference between the prior art and the claims was a recitation of a specific range of water temperatures, and since one of ordinary skill in the art would not expect the method of the instant claims to perform differently than the prior art method, thus the claimed method is not patentably distinct from the prior art method (See MPEP 2144.04 IV A). "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," (see MPEP 2144.05 IIA), as the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages" (see MPEP 2144.05 IIA) to obtain the desired characteristics of the product as is taught by Dudacek (col. 7 lines 14-17).

Therefore it would have been obvious to one of ordinary skill in the art to teach the water temperature which is introduced in the starch mixture being between 20 and 70C or 30-60C since all the claimed elements were known in the prior art and one skilled in the art could have substituted the water temperature of Dudacek which is introduced into the product with no change in their respective functions, thus yielding predictable results to one of ordinary skill in the art at the time of the invention since the water temperature which is introduced is a function of the initial characteristics of the product, as well as other undefined rate dependent variables in order to ensure high dispersability and no agglomerating (col. 7 lines 7-10) and further to reduce the time of operation of the motor driven extruder.

- Claims 1, 3-4, 10, 12-14, 16-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Protzman et al. (3137592) in view of Bindzus et al. (http://cat.inist.fr/?aModele=afficheN&cpsidt=13906359;Glass transition of extruded wheat, corn and rice starch).

Protzman et al. teaches a method for producing a starch mixture comprising mixing in an extruder (col. 4 line 45-47) a first component containing at least one starch (col. 2 lines 3-27), with a second component containing at least water (col. 4 lines 53), where the total water content of the mixture containing the first component and the second component is less than 40 % by weight (col. 5 lines 41-44), maintaining the temperature during the mixing and cooking processes in the extruder between 120° and 250°C (col. 5 lines 70-75 through col. 8 line 1, col. 13 lines 67-68), drying the extrudate obtained in the extruder (col. 9 line 41), and grinding and screening the dried extrudate (col. 6 lines 39-40).

Protzman et al. continues by teaching that the initial water content of the first component is about 10-15% by weight (col. 9 lines 72-73), that the total water content of the mixture containing the first component and the second component is between 15-20% (col.12 line 37), in addition to teaching adding acid (col. 7 lines 15-45) or alkali or the combination of the two to the mixture (col. 8 lines 1-14), where the mixture can be used as a binder for cellulose fibers (col. 7 lines 5-7).

However Protzman et al. is silent with respect to a specific mechanical energy of 120 to 220 Wh/kg being introduced to the product.

Bindzus et al. teach extrusion cooking of a starch product "under a specific mechanical energy input (SME) ranging from 81 to 365 WH/kg" for affecting texture attributes (abstract).

Therefore although Protzman et al. is silent with respect to a specific mechanical energy of 120 to 220 Wh/kg being introduced to the product, Protzman et al. does teach the desire to provide physically modified starch where the initial moisture content of the starch material can be adjusted (col. 9 lines 72-73), which directly affects the viscosity of the starch product within, in addition to teaching the specific moisture content of the product as is taught by claim 1. Further since Protzman et al. teaches that the temperature, the rotational screw speed, and/or the rate of feed into the extruder can be controlled (col. 1 lines 10-17), with respect to any starch as the raw material (col. 2 lines 3-4), and since the only difference between the prior art and the claims was a recitation of a specific range of mechanical energy of 120 to 220 Wh/kg which is applied to the product and as specifically taught by Bindzus et al. (abstract), one of ordinary skill in the art would have been motivated to combine the teachings of Protzman et al. and Bindzus

et al. since the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages" (see MPEP 2144.05 IIA) to obtain the desired characteristics of the product as is taught by Protzman et al. (col. 9 lines 44-65).

Further, since one of ordinary skill in the art would not expect the method of the instant claims to perform differently than the prior art method, and since MPEP 2144.04 IV A states "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," the claimed method is not patentably distinct from the prior art method (See MPEP 2144.04 IV A).

Therefore it would have been obvious to one of ordinary skill in the art to teach a specific mechanical energy of 120 to 220 Wh/kg being introduced to the product since all the claimed elements were known in the prior art and one skilled in the art could have substituted the specific mechanical energy which is introduced into the product with no change in their respective functions, thus yielding predictable results to one of ordinary skill in the art at the time of the invention since the mechanical energy which is introduced is a function of the desired final product and the initial characteristics of the product, as well as other undefined rate dependent variables for producing the desired texture attributes with respect to an extruded, cooked starch product as is taught by Bindzus et al. (abstract).

- Claims 5-6, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dudacek (6001408) in view of Bindzus et al. (http://cat.inist.fr/?aModele=afficheN&cpsidt=13906359;Glass transition of extruded wheat, corn and rice starch) as applied above and in further view of Neisser et al. (DE 4344139).

Dudacek and Bindzus et al. are taken as above however both is silent with respect to the starch material being flour, and specifically rye flour.

Neisser et al. teach forming a suspension of rye flour and water with an initial moisture content of 15% and extruding the suspension (abstract).

Although neither Dudacek nor Bindzus et al. teach the starch material being specifically rye flour, Dudacek does teach that any farinaceous material can be used as

the source of starch (col. 5 line 1-2), where Bindzus et al. also teach starch containing blends (abs), where Neisser teaches the starch material being specifically rye flour (abstract), and thus one of ordinary skill in the art would have been motivated to combine the teachings since all teach the desire to extrude starch materials and one skilled in the art could have substituted the rye flour of Neisser et al. which is introduced into the product with no change in their respective functions, thus yielding predictable results to one of ordinary skill in the art at the time of the invention since.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have combine the teaching of Dudacek, Bindzus et al. and Neisser and taught that the starch material is specifically rye flour since Dudacek, Bindzus et al. and Neisser et al. teach the desire to provide a method of forming a modified starch mixture, since Dudacek is aware of the potential high cost of production (col. 1 lines 65-67) and since Neisser positively teaches the use of rye flour as the starch for it's art recognized purpose of forming starch mixtures which reduces the overall processing costs thereby increasing profits due to the less expensive rye flour as is taught by Neisser et al.

It would have further been obvious since MPEP 2144.07 states that the selection of a known material based on its suitability for its intended use supports a prima facie obviousness determination, where in the instant case the specific starch does not provide a patentable distinction over the prior art.

Response to Arguments

With respect to the Ids statement filed 2/22/05, although the eight references were previously listed the it is noted that the ids does not currently provide a list of the information submitted for consideration by the Office as it is noted that the search report only appears listed on the cover sheet and not on an accompanying 1449 form or a previous 1449 form.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore although neither Dudacek nor Protzman et al. nor Neisser et al. teach the specific mechanical energy range, Bindzus et al. does teach extrusion cooking of a starch product "under a specific mechanical energy input (SME) ranging from 81 to 365 WH/kg" for

affecting texture attributes (abstract) and in combination with the primary references discloses applicants claimed invention.

With respect to applicants argument that Dudacek does not teach air drying, applicant is urged to column 8 lines 30-31 which teaches ambient air drying.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Leff whose telephone number is (571) 272-6527. The examiner can normally be reached on Mon-Fri 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached at (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Drew E Becker/
Primary Examiner, Art Unit 1794

/Steven Leff/
Examiner, Art Unit 1794